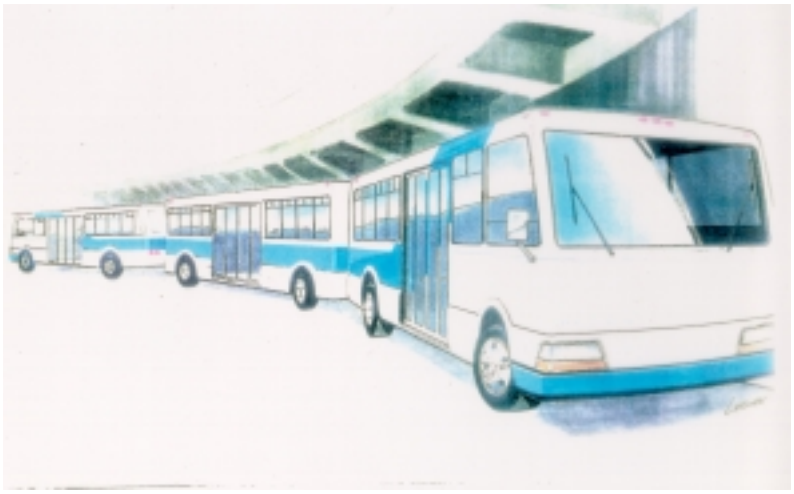
CLEAN FUELS FOR CLEAN AIR

Clean Cities ..... Honolulu

January 2001 **Volume 7, Issue 1**

Inside This Issue



Prototype Electric Tram May Be Demonstrated at Honolulu International Airport

The Hawaii Electric Vehicle Demonstration Project, part of the state's High Technology Development Corp., contracted Enova Systems, a California-based firm with a service office in Honolulu, to build a prototype zero emissions, electric-powered tram that may eventually replace the diesel-powered Wikiwiki shuttles at Honolulu International Airport. Enova, a designer and builder of electric vehicle drive systems, is so confident that the state will eventually specify the use of electric trams at the airport, that they put up their own money to share in the cost of building this prototype.

The new tram, being manufactured by APS Systems of Oxnard, California, is expected to arrive at the end of February for testing and evaluation according to Jack Bowman, Manager of Enova's Honolulu office. According to Bowman, Airport Group International, the contractor currently operating the Wikiwiki shuttle system, is very interested in conducting demonstration runs of the quiet, non-polluting tram. The plan is to have the battery-powered tram used in place of one of the diesel-powered shuttles by the end of March.

The prototype tram (see artist's concept above) consists of a powered car attached to two trailers capable of holding up to 100 people. The tram is

(see *Electric Tram* - Page 2)

(*Electric Tram* from Page 1)

fully air conditioned, ADA compliant, and produces no exhaust or diesel engine noise. Its floor is at curb level so that access is effortless, even for the disabled and those of us toting wheeled luggage. All power is provided by onboard batteries that are recharged as needed. No external "third rail" or overhead trolley wires will be used.

Tom Quinn, Program Director for HEVDP says "This tram is a true example of the state-of-the-art in clean, comfortable, non-polluting transit vehicles being developed worldwide and Honolulu should be very proud of being at the forefront of this trend."

Electron Marathon Coming in March

The 6th Annual Electron Marathon will be held on Saturday, March 24 at Ford Island. The competition challenges teams of teachers and students in grades 9-12 to design, build, and race electric powered go-carts around a set endurance course using only battery power. Hawaiian Electric Co., one of the event sponsors, is anticipating 30 teams this year. Last year's winning team, from West Hawaii Explorations Academy, is pictured at right.

Particulars on the Electron Marathon are as follows:

Date: Saturday, March 24, 2001
Place: Ford Island
Time: Arrive at 8:00 AM. Prelims begin at 9:00 AM.

(See *Electron Marathon* - Page 3)

Alternative Fuel Vehicle Workshop in Honolulu

Clean Cities Honolulu is sponsoring a special free workshop for all fleet managers and vehicle dealers in the state. The workshop will cover the types of alternative fuels and alternative fuel vehicles currently available in Hawaii. It will also cover information about how to purchase these alternative fuel vehicles.

Workshop particulars are as follows:

Date: Tuesday, February 6, 2001
Time: 1:30 to 3:30 PM
Place: HEVDP Office
Upstairs Conf. Room.
531 Cooke St.
Cost: FREE!!

Please contact Ross Sasamura at 523-4341, or via email at rsasamura@co.honolulu.hi.us if you have any questions or if you plan to attend.

Biodiesel Fuel To Be Manufactured on Oahu

Pacific Biodiesel, a Maui-based manufacturer of biodiesel fuel, is constructing a processing facility on Oahu to begin producing their vegetable oil-based fuel in Honolulu by July.

Larry Zolezzi, Vice President of Pacific Biodiesel, says that the entire output of the Maui plant is completely consumed by contracted buyers. Some of the current users are Maui County, The Pacific Whale Foundation, Na Pali Eco Adventure Tours on Kauai, and Volcanoes National Park on the Big Island.

The additional processing capacity at the new Sand Island facility should make biodiesel more readily available throughout the state, according to Zolezzi. The increased capacity also provides for additional recycling options for the waste cooking oils and greases generated by the many restaurants and hotels in Honolulu.

National Clean Cities Conference May 13-16 in Philadelphia

The 7th National Clean Cities Conference is being held at the Pennsylvania Convention Center in Philadelphia on May 13-16, 2001. It is being sponsored by the Department of Energy's Office of Energy Efficiency and Renewable Energy in conjunction with the Greater Philadelphia Clean Cities Program. Deadline for registration is May 4. Additional information is available on the Clean Cities homepage (www.ccities.doe.gov).

(*Electron Marathon* from Page 2)

If you have any questions, please contact Regina at the HECO Education and Consumer Affairs Office (543-7960).

Volunteers needed!
In order to have the Electron Marathon run smoothly, volunteers are needed to assist with tasks such as registration, scorekeeping, timing, etc. If you are able to volunteer, please attend an organizational meeting on Wednesday, March 14 at 6:00 PM. The meeting will be held in the HEVDP Office, Upstairs Conference Room, 531 Cooke St. Pizza will be provided.

Biodiesel is First Alternative Fuel to Complete Clean Air Act Testing

(From *National Biodiesel Board*) In June 2000, the federal government announced that biodiesel, an alternative fuel produced from vegetable-based oils as opposed to petroleum, has become the first and only alternative fuel to have successfully completed the health effects testing requirements of the Clean Air Act.

The biodiesel industry funded the expensive testing – costing more than two million dollars – to become the first alternative fuel to complete the testing. The results show that biodiesel poses no health threats and its use results in a 90% reduction in air toxins. Because its properties are very close to that of diesel fuel, biodiesel can be used in a variety of diesel engines with very little to no modifications.

Since the announcement, demand for biodiesel nationwide has risen dramatically. Many bus and truck fleets have found it the most cost-effective option for meeting EPACTS's alternative fuel requirements.

The Congressional Budget Office determined that using biodiesel is the least-cost option among alternative fuels to meet alternative fuel requirements for government fleets. The CBO predicted that the federal government would save $10 million annually by using biodiesel in its fleet vehicles.

Hyundai Announces Demonstration of Electric Vehicles in Hawaii

In November 2000, Hyundai Motors announced that they will use Oahu as their test bed for the introduction of their all electric Santa Fe model SUV. The NiMH battery-powered SUVs will be part of a 2 year demonstration project during which these vehicles will not be found anywhere else in the U.S.

According to Tom Quinn, Program Director for the Hawaii Electric Vehicle Demonstration Project, one of the reasons Hyundai chose Hawaii was because of the planned Rapid Charging Station Network for electric vehicles being installed around the entire island of Oahu. All 15 SUVs that are a part of this demonstration will be outfitted with Rapid Charge capabilities and will be put into fleet use by the state, C&C of Honolulu, Hickam AFB, and HECO.

Places To Find Us

Feb. 6 Alternative Fuel Vehicle Workshop, 1:30 to 3:30 PM. HEVDP Office Conf. Room, 531 Cooke St. (see page 2)

Monthly Meetings held on the 4th Tuesday of each month at 1:30 PM. HEVDP Conf. Room, 531 Cooke St.

Places To Learn More About Us

Please visit our website at: www.state.hi.us/dbedt/eret/cc.

List of Model Year 2001 Alternative Fuel Vehicles Available in Hawaii (See Insert)

The Alternative Fuels Data Center, a component of the Office of Transportation Technologies within the U.S. Department of Energy, has developed a list of alternative fuel vehicles available in the U.S. from the major vehicle manufacturers for the 2001 model year. Maria Tome, an engineer within the Energy Resources and Technology Division of DBEDT, has updated the list to indicate which vehicles are available in Hawaii.

The AFDC list can be found at www.afdc.doe.gov/afvehicles.html.

Honolulu Clean Cities is a non-profit organization sponsored by the U.S. Department of Energy, for the purpose of promoting alternate transportation fuels for: clean air, energy independence, and local economic development.

This newsletter is intended to provide information on alternative transportation fuels and alternative fuel vehicles to Honolulu Clean Cities stakeholders and others interested in this endeavor.

To find out more, please contact

Ross Sasamura
C&C Honolulu, Department of Facilities Management
650 S. King St
Honolulu, HI 96813
(808) 523-4341
rsasamura@co.honolulu.hi.us.

Clean Cities Honolulu
160 Ahui Street
Honolulu, HI 96813

BULK RATE
US POSTAGE
PAID
HONOLULU, HAWAII
PERMIT NO. #75

CHANGE SERVICE REQUESTED

Model Year 2001: Alternative Fuel Vehicles and Advanced Technology Vehicles Available or Nearing Completion

	Fuel Type	Model	Vehicle Type	Emission Class	Power-train	Fuel Capacity	Range
	American Honda Motor Corporation 888-CCHONDA http://www.honda.com						
NOT AVAILABLE IN HAWAII	CNG Dedicated	Civic GX	Sub-compact	ILEV, ULEV	1.6L, 4-cylinder	8 GGE	220-245 mi
NOT AN AFV	Hybrid EV (NiMH)	[4]Insight	Two Seater	LEV (CA-ULEV)	1.0 L, 3-cylinder VTEC Engine with Integrated Motor Assist System (144-volt NiMH)	(NiMH) battery +10.6 Gal Gasoline	600-700 mi
	DaimlerChrysler 1-800-999-FLEET http://www.fleet.chrysler.com						
NOT AVAILABLE IN HAWAII	CNG Dedicated	Dodge Ram Van, Dodge Ram Maxi Van, Dodge Ram Wagon, Dodge Ram Maxi Wagon	Van, Wagon	ILEV, ULEV (CA SULEV)	5.2L V8	18.7 GGE	200-300 mi
	E85 FFV	[1]Chrysler Town and Country, [1]Dodge Caravan, [1]Dodge Grand Caravan, [1]Chrysler Voyager, [1]Grand Voyager	Minivan	LEV	3.3L V6	20 GGE	TBD
	Ford Motor Company 1-877-ALTFUEL http://www.fleet.ford.com						
NOT AVAILABLE IN HAWAII	CNG Dedicated	Ford E-Series Cutaway	Passenger Van	ULEV	5.4L V8	19.2 GGE (Does not include extended range tank options)	148-238 mi
NOT AVAILABLE IN HAWAII	CNG Dedicated	F-150	Light-Duty Pickup	ILEV, SULEV CA SULEV	5.4L V8	18.8 or 21.6 GGE	200-300 mi
NOT AVAILABLE IN HAWAII	CNG Dedicated	Econoline	Van	ILEV, ULEV CA SULEV	5.4L V8	16.2 or 18.6 GGE	150-275 mi
	CNG Bi-Fuel	F-150	Light-Duty Pickup	ULEV	5.4L V8	12.5 GGE	100-175 mi
NOT AVAILABLE IN HAWAII	CNG Dedicated	Crown Victoria	Sedan	ULEV	4.6L V8	9.4 GGE 14.8 with extended tank option	100-175 mi optional tank range 200-300 mi
	E85 FFV	[1]Taurus	Sedan	LEV	3.0L V6	18 GGE	250-350 mi
	Electric (Lead Acid)	Ranger EV (Lead Acid)	Light-Duty Pickup	ZEV	3-phase AC motor	23kWh	73 mi
	LPG Bi-Fuel	F-150	Light-Duty Pickup	ULEV	5.4L V8	26.2 GGE	300-400 mi
	LPG Bi-Fuel	F-Series Super Duty	Medium-Duty Truck	ULEV	6.8L V10	21or 28 GGE Propane Tank + 19 Gallon Gas Tank	TBD
	General Motors Corporation 1-888-GM-AFT-4U http://www.gmaltfuel.com						
	CNG Bi-Fuel	Chevrolet Express GMC Savana	Cargo or Passenger Van	LEV	5.7L V8	TBD	TBD
	CNG Bi-Fuel	Chevrolet Cavalier	Sub-compact	LEV	2.2L V4	6.2 GGE CNG + 15.2 Gallon Gasoline	560 mi

"FFV" means "Flexible Fueled Vehicle."
It can be operated on gasoline (it has one fuel tank, with a fuel sensor in the fuel line that adjusts the engine's air:fuel ratio and timing).

A "Bi-Fuel"vehicle may also be operated on gasoline.
It has two fuel tanks: one for gasoline, one for the alternative fuel.

Model Year 2001: Alternative Fuel Vehicles and Advanced Technology Vehicles Available or Nearing Completion

Fuel Type	Model	Vehicle Type	Emission Class	Power-train	Fuel Capacity	Range
E85 FFV	[1]Chevrolet S-10 [1]GMC Sonoma	Light-Duty Pickup	LEV	2.2L V4	18.5 GGE	400 mi
Electric (Lead Acid)	EV-1 (CA, AZ only)	Two Seater	ZEV	3 phase AC induction	18.7 kWh	55-95 mi
Electric (NiMHI)	EV-1 (CA, AZ only)	Two Seater	ZEV	3 phase AC induction	26.4 kWh	75-130 mi
LPG Dedicated	Chevrolet/GM Medium Duty Truck	Medium-Duty Truck	LEV	8.1L V8	TBD	TBD
Nissan North America 800-NISSAN1 http://www.nissandriven.com/menu_nf.html						
Electric (Lithium-Ion)	Altra-EV (select fleets in CA)	Mid-size Wagon	ZEV	62 kW AC Induction	TBD	80 mi
Electric (Lithium-Ion)	Hypermini (select fleets in CA)	Two Seater	ZEV	TBD	TBD	40 mi
Solectria Corporation 978-658-2231 http://www.solectria.com						
Electric (Lead Acid)	Citivan	Service Van	ZEV	70kW AC Induction	52 modules (Sealed PbA)	40 mi
Electric (Lead Acid)	Flash	Small Pick-up	ZEV	34kW AC Induction	12, 12-volt modules	60 mi
Electric (PbA, NiMH, NiCd)	Force	Compact	ZEV	42 kW AC Induction	12, 13-volt modules (PbA)	50-80 mi PbA, 85-136 mi NiCd, 105-170 NiMH
Toyota Motor Sales, USA, Inc. 800-GO-Toyota http://www.toyota.com						
NOT AVAILABLE IN HAWAII CNG Dedicated	CNG Camry (fleet customers only)	Compact	ULEV	2.2-liter, 16 valve, 4-cylinder	11.4 GGE	270 mi
Electric (PbA or NiMH)	RAV-4EV (fleet customers only)	Small SUV	ZEV	50 kW	24, 12-volt modules (NiMH)	125 mi
NOT AN AFV Hybrid EV	[4]Prius	Compact	SULEV	1.5 DOHC 16-valve, EFI 4 cylinder/VVT-I	40 modules NiMH + 11.8 Gasoline	570 mi

[1] All E85 vehicles are considered flexible fuel vehicles (FFVs).

[2] CNG and LPG vehicles fuel capacity based on slow fill @ 3600 psi.

[3] Estimated range on alternative fuel and based on fuel capacity. For EVs, range depends on battery type.

[4] The Insight and Prius are considered advanced technology vehicles, not AFVs.

Glossary of Abbreviations

AC = Alternate Current
CA = California
CNG = Compressed Natural Gas
E85 = 85% Ethanol, 15% Gasoline
EV = Electric Vehicle
FFV = Flexible Fuel Vehicle
Gal = US Gallon
GGE = Gasoline Gallon Equivalent
ILEV = Inherently Low Emission Vehicle
kW = Kilowatts
L = Liter
LPG = Liquefied Petroleum Gas (propane)
Mi = Miles
NiCd = Nickel Cadnium
NiMH = Nickel Metal Hydride
PbA = Lead Acid
SULEV = Super Ultra Low Emission Vehicle
SUV = Sport Utility Vehicle
TBD = To Be Determined
TLEV = Transitionally Low Emission Vehicle
ULEV = Ultra Low Emission Vehicle
ZEV = Zero Emission Vehicle

Other Websites

Alternative Fuel Vehicle Fleet Buyers Guide
http://www.fleets.doe.gov

Alternative Fuels Data Center
http://www.afdc.doe.gov

Office of Transportation Technologies
http://www.ott.doe.gov